V. REMARKS

The Office Action asserts that the title of the invention is not descriptive and requires a new title. A new title of the invention as suggested by the Examiner is incorporated herein.

The Office Action objects to claims 1 and 6 because of minor informalities. The claims are amended to obviate the objection. Withdrawal of the objection is respectfully requested.

Claims 1 and 3-5 are rejected under 35 U.S.C. 102(b) as anticipated by Hsieh (US Patent No: 5,249,123). Claim 2 is rejected under 35 U.S.C. 103(a) as unpatentable over Hsieh as applied to claim 1. Claim 6 is rejected under 35 U.S.C. 103(a) as unpatentable over Hsieh as applied to claim 1 and further in view of Roos et al. (U.S. Patent No: 6,041,097). The rejections are respectfully traversed.

The Examiner points out that one of the features of the present invention, "time lag removing means", is disclosed in Hsieh, col.1, line 60 to col. 2, line 2. The Examiner is incorrect. That is, Hsieh and the present invention are different in the signal component removed by the time lag removing means. This is explained specifically below.

The section of Hsieh pointed out by the Examiner reads:
"It has been shown that a slow primary speed of the detector degrades spatial resolution of a CT imaging system, especially higher scanning speeds. For example, a scan at 0.5 seconds per rotation will be degraded relative to a scan at 1.0 seconds per rotation, resulting from the significantly increased sampling rate. To overcome this shortcoming, recursive correction algorithms have been proposed. Correction using recursive correction algorithms compensate not only for effects of the detector response, but also for the afterglow components."

In Hsieh, the rotating speed of the detector is unstable in an initial stage and tends to be slower than a set speed. The dose of radiation detected by the detector in one rotation at this time is greater than that detected in time of speed stability. In other words, the sampling rate increases remarkably. In order to remove signal components corresponding to the increase in the dose of radiation,

which constitute a shortcoming, Hsieh proposes the recursive correction algorithms.

That is, Hsieh proposes correction algorithms for recursively averaging output signal levels resulting from variations in the rotating speed of the detector.

On the other hand, the time lag removing means of the present invention, where the signal sampling time is always fixed, recursively removes a signal component not read by the radiation detecting means and added as an excess part to a next signal component.

As noted above, Hsieh concerns averaging of output signal levels resulting from variations in the rotating speed of the detector, and does not disclose the time lag removing means of the present invention. Hsieh and the present invention are different in the algorithm of recursive computation. It is respectfully submitted that, for at least these reasons, the present invention is not obvious in view of Hsieh.

Regarding the difference shown in the reference drawings:

Hsieh in which the numerator of equation 5 is divided by constant = $\Sigma\beta$, and the present invention which does not divide by a constant, differ as follows.

Hsieh, at col. 4, line 50, states $\beta n = \alpha n (1- e^{-\Delta t/\tau n})$. That is, $\Sigma\beta$ is a constant but its value is always less than 1.0 since $e^{-\Delta t/\tau n}$ is subtracted from 1.0.

With a recursive computation that continues to divide the numerator by a value less than 1.0 (constant), the value of the denominator in equation 5, i.e. the value of Xk, keeps increasing. This means that Hsieh performs a correction for increasing insufficient signal component Yk with signal component Xk by equation 5.

On the other hand, the present invention means that $\Sigma\beta$ is always 1.0. This is clear also from equation A as set out in the specification. That is, each of the detection signals taken from the radiation detecting means at fixed sampling time intervals has a lag component Yk, which was not read at a previous point of time, added to a true value Xk to be determined. Only this lag component Yk is subtracted by recursive computation process.

Thus, Hsieh and the present invention have different waveforms as seen in the attached reference drawings. Thus, it is respectfully submitted that none of the applied art, alone or in combination, teaches or suggests the features of claims, particularly claim 1. As a result, it is respectfully submitted that one of ordinary skill in the art would not be motivated to combine or modify the features of the applied art because such combination would not result in the claimed invention. Therefore, it is respectfully submitted that the pending claims are allowable over the applied art.

Withdrawal of the rejections is respectfully requested.

The Office Action provisionally rejects claims 1, 2 and 6 under five separate rejections as being unpatentable over five different co-pending applications. Upon an indication of allowable subject matter, Applicants will file a Terminal Disclaimer.

In view of the foregoing, reconsideration of the application and allowance of the pending claims are respectfully requested. Should the Examiner believe anything further is desirable in order to place the application in even better condition for allowance, the Examiner is invited to contact Applicants' representative at the telephone number listed below.

Should additional fees be necessary in connection with the filing of this paper or if a Petition for Extension of Time is required for timely acceptance of the same, the Commissioner is hereby authorized to charge Deposit Account No. 18-0013 for any such fees and Applicant(s) hereby petition for such extension of time.

Respectfully submitted,

Date: June 9, 2006

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Enclosure(s): Amendment Transmittal
Reference Drawing Figs. 1 and 2

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